

## CLAIMS

What is claimed is:

1. A method of generating at least three local oscillator signals for receiving a communication signal occupying corresponding sub-bands of a frequency band, the method comprising: generating at least a first local oscillator signal directly using frequency synthesis; and generating at least a second local oscillator signal by mixing the first local oscillator signal and a further frequency signal.

2. The method of claim 1, wherein the further frequency signal comprises an offset frequency separating adjacent sub-bands or an integer multiple thereof.

3. The method of claim 2, wherein the further frequency signal comprises an offset frequency separating adjacent sub-bands, further comprising generating at least a third local oscillator signal by mixing the first local oscillator signal and a further frequency signal that is an integer multiple of the offset frequency.

4. The method of claim 2, wherein the further frequency signal comprises a selectable integer multiple of an offset frequency separating adjacent sub-bands.

5. The method of claim 2, comprising generating three local oscillator signals for three contiguous sub-bands, wherein the first local oscillator signal corresponds to a center sub-band of the three sub-bands.

6. The method of claim 1, comprising: generating first and third local oscillator signals directly using frequency synthesis; and generating the second local oscillator signal by mixing signals derived from the first and third local oscillator signals.

7. Circuitry for generating at least three local oscillator signals for receiving a communication signal occupying corresponding sub-bands of a frequency band, comprising: means for synthesizing a first local oscillator frequency; and a single sideband mixer responsive to the first local oscillator frequency and to a further frequency signal for generating at least a second local oscillator signal.

8. The circuitry of claim 7, wherein the further frequency signal comprises an offset frequency separating adjacent sub-bands or an integer multiple thereof.

9. The circuitry of claim 8, wherein the further frequency signal comprises an offset frequency separating adjacent sub-bands, comprising a further single sideband mixer for generating at least a third local oscillator signal by mixing the first local oscillator signal and a further frequency signal that is an integer multiple of the offset frequency.

10. The circuitry of claim 8, comprising a programmable divider for generating as the further frequency signal a selectable integer multiple of an offset frequency separating adjacent sub-bands.

11. The circuitry of claim 8, wherein the three local oscillator signals are for three contiguous sub-bands, and wherein the first local oscillator signal corresponds to a center sub-band of the three sub-bands.

12. The circuitry of claim 7, comprising means for synthesizing a third local oscillator frequency, wherein the single sideband mixer mixes signals derived from the first and third local oscillator signals.